COST SUMMARY WORK

Task description: **TR124 Cost Summary**

Site: **Trapper Mine** Permit Action: TR124 Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 000TR124 State: Colorado Abbreviation: None
Date: 3/5/2020 County: Moffat Filename: C010-000TR124
User: RAR

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
A001	Backfill and Grading N Pit	TRUCK1	1	1,639.26	$4,904,240
A002	N Pit	DOZER	2	342.65	$364,176
N14	Replace Topsoil on N Pit	SCRAPER1	1	208.49	$801,989
N14a	Replace Topsoil on N Pit	SCRAPER1	1	19.87	$76,432
N14b	Replace Topsoil on N Pit	SCRAPER1	1	27.18	$104,551
N14c	Replace Topsoil on N Pit	SCRAPER1	1	40.54	$162,832
N16	Seed N Pit: >6700 ft.-Rangeland with Shrubs	REVEGE	1	302.60	$242,250
N16B	Seed N Pit 60.1 acres without shrubs TR124	REVEGE	1	60.10	$30,539
			SUBTOTALS:	**2640.69**	**$6,687,009**

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	$135,078
Performance bond:	1.05	Total =	$70,214
Job superintendent:	1,320.34	Total =	$91,618
Profit:	10.00	Total =	$668,701
		TOTAL O & P =	$965,610
		CONTRACT AMOUNT (direct + O & P) =	$7,652,619

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	$500	Total =	$500
Engineering work and/or contract/bid preparation:	3.27	Total =	$250,241
Reclamation management and/or administration:	2.65		$202,794
CONTINGENCY:	0.00	Total =	$0

TOTAL INDIRECT COST = $1,419,146

TOTAL BOND AMOUNT (direct + indirect) = $8,106,155

TRUCK/LOADER TEAM WORK

Task description: **Backfill and Grading N Pit**

Site: **Trapper Mine** Permit Action: TR124 Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: A001 State: Colorado Abbreviation: None
Date: 3/19/2020 County: Moffat Filename: C010-A001
User: RAR

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Shift basis: 1 per day

	Equipment Description
Truck Loader Team -Truck:	KOMATSU 830E
-Loader:	CAT 6090
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance –Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:	Truck/Loader Team		Support Equipment		Maintenance Equipment	
	Truck	Shovel	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	25	25	25	25
Ownership cost/hour:	$193.78	$23.07	$140.61	$140.61	$82.71	$68.95
Operating cost/hour:	$213.02	$930.15	$33.84	$33.84	$17.52	$25.83
%Utilization-riper:	NA	0	15	NA	NA	NA
Ripper own. cost/hour:	NA	$0.00	$20.29	$0.00	$0.00	$0.00
Ripper op. cost/hour:	NA	$0.00	$1.73	$0.00	$0.00	$0.00
Operator cost/hour:	$34.38	$37.27	$41.24	$41.24	$28.52	$21.09
Unit Subtotals:	$441.17	$990.49	$217.42	$215.69	$128.75	$115.88
Number of Units:	3	1	1	1	1	1
Group Subtotals:	Work:	$2,314.00	Support:	$433.11	Maint:	$244.63

Total work team cost/hour: **$2,991.74**

MATERIAL QUANTITIES

Initial volume: 5,187,693 CCY Swell factor: 1.000
Loose volume: **5,187,693** LCY

Source of estimated volume: TR124 Appendix A Table A-3.1
Source of estimated swell factor: Cat Handbook
Material Purchase Cost: $0.00
Total Cost: $0.00

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basis:

Material weight:	3,300	Pounds/LCY
Description:	Decomposed rock - 75% Rock, 25% Earth	
Rated Payload:	492,200	Pounds
Payload Capacity:	149.15	LCY

Truck Bed (volume) Basis:

Struck Volume:	153.00	LCY
Heaped Volume:	192.00	LCY
Average Volume:	172.50	LCY
Adjusted Volume:	149.15	LCY

Final Truck Volume Based on Number of Loader Passes: **145.78** LCY

Loading Tool Capacity

Bucket Size Class: NA

Rated Capacity:	58.900	LCY (heaped)
Bucket Fill Factor:	0.825	Blasted rock - avg. blasted (75 - 90%) 0.825
Adjusted Capacity:	**48.593**	LCY

Job Condition Corrections: Site Altitude (ft.): 6400 feet

	Truck	Loader	Source
Altitude Adj:	1.000	1.000	(CAT HB)
Job Efficiency:	0.830	0.830	(CAT HB)
Net Correction:	**0.830**	**0.830**	

Loading Tool Cycle Time: Number of Loading Tool Passes Required to Fill Truck: 3 passes

Excavators and Front Shovels:

Machine Cycle Time vs. Job Condition Rating: ABOVE AVERAGE

Selected Value within this Basic Rating: AVERAGE

Track Loaders – Material Description:

Cycle Time Elements (min.):

Load: NA Maneuver: NA Dump: 0.100

Wheel and Track Loaders - Unadjusted Basic Loader Cycle Time (load, dump, maneuver): NA minutes

Cycle Time Factors		Factor (min.)	Source
Material:	NA	NA	(Cat HB)
Stockpile:	NA	NA	(Cat HB)
Truck Ownership:	NA	NA	(Cat HB)
Operation:	NA	NA	(Cat HB)
Dump Target:	NA	NA	(Cat HB)

Net Cycle Time Adjustment:	NA	minutes
Adjusted Loader Cycle Time:	**0.498**	minutes
Net Load Time per Truck:	**1.494**	minutes

Truck Cycle Time:

Truck Exchange Time:	0.80	Minutes	Adjusted for site altitude:	0.800	Minutes
Truck Load Time:	1.494	Minutes	Adjusted for site altitude:	1.494	Minutes
Truck Maneuver and Dump Time:	1.20	Minutes	Adjusted for site altitude:	1.200	Minutes

Truck Travel (Haul & Return) Time: Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3430.00	0.00	3.00	3.00	2409	1.962

Haul Time: **1.962** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3430.00	0.00	3.00	3.00	3503	1.356

Return Time: **1.356** minutes
Total Truck Cycle Time: **6.812** minutes

Loading Tool unit Production	3,812.84	LCY/Hour	Adjusted for job efficiency:	3,164.66	LCY/Hour
Truck Unit Production	1,284.01	LCY/Hour	Adjusted for job efficiency:	1,065.73	LCY/Hour
Optimal No. of Trucks:	3	Truck(s)	Selected Number of Trucks:	3	Truck(s)

Adjusted hourly truck team production: 3,197.18 LCY/Hour
Adjusted single truck/loader team production: 3,164.66 LCY/Hour
Adjusted multiple truck/loader team production: **3,164.66** LCY/Hour

JOB TIME AND COST

Fleet size:	1	Team(s)	Total job time:	**1,639.26**	Hours
Unit cost:	$0.945	/LCY	Total job cost:	**$4,904,240**	

BULLDOZER WORK

Task description: **N Pit**

Site: **Trapper Mine** Permit Action: TR124 Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #:	A002	State:	Colorado	Abbreviation:	None
Date:	3/5/2020	County:	Moffat	Filename:	C010-A002
User:	RAR				

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D11T - 11U
Horsepower: 850
Blade Type: Universal
Attachment: NA
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$268.07	NA
Operating Cost/Hour:	$222.10	100
Ripper own. Cost/Hour:	$0.00	NA
Ripper op. Cost/Hour:	$0.00	0
Operator Cost/Hour:	$41.24	NA

Total unit Cost/Hour: $531.41
Total Fleet Cost/Hour: **$1,062.82**

MATERIAL QUANTITIES

Initial Volume: 371,699
Swell factor: 1.000
Loose volume: **371,699** LCY

Source of estimated volume: TR124 Appendix A, Table A-3.1
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 325 feet
Unadjusted hourly production: 984.2 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: -10 %
Average site altitude: 6,400 feet

Material weight: 3,300 lbs/LCY

Weight description: Decomposed rock - 75% Rock, 25% Earth

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.200	(SLOT)
Visibility:	0.800	(POOR)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	1.225	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.697	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5511

Adjusted unit production: 542.39 LCY/hr

Adjusted fleet production: **1084.78** LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: $0.980/LCY

Total job time: **342.65** Hours

Total job cost: **$364,176**

SCRAPER TEAM WORK

Task description: **Replace Topsoil on N Pit**

Site: **Trapper Mine** Permit Action: TR124 Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: **N14** State: Colorado Abbreviation: None
Date: 2/10/2020 County: Moffat Filename: C010-N14
User: RAR

Agency or organization name: DRMS

HOURLY EQUIPMENT

COST Shift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance –Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

Cost Breakdown:	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	50	50	50	50
Ownership cost/hour:	$174.06	NA	$140.61	$140.61	$82.71	$9.27
Operating cost/hour:	$190.35	NA	$67.67	$67.67	$35.04	$8.87
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	$0.00	$0.00	$0.00	$0.00
Ripper op. cost/hour:	NA	NA	$0.00	$0.00	$0.00	$0.00
Operator cost/hour:	$30.86	NA	$41.24	$41.24	$28.52	$21.09
Unit Subtotals:	$395.26	NA	$249.52	$249.52	$146.27	$39.23
Number of Units:	8	0	1	1	1	1
Group Subtotals:	Work:	$3,162.08	Support:	$499.04	Maint:	$185.50

Total work team cost/hour: **$3,846.62**

MATERIAL QUANTITIES

Initial volume: 336,429 CCY Swell factor: 1.000
Loose volume: **336,429** LCY

Source of estimated volume: TR124 Application
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Scraper Bowl (volume) Basis:

Material weight: 2,550 lbs/LCY
Material description: Earth - Dry packed
Rated Payload: 81,600 pounds
Payload Capacity: 32.00 LCY

Struck Volume: 24.00 LCY
Heaped Volume: 34.00 LCY
Average Volume: 29.00 LCY
Adjusted Capacity: **29.00** LCY

Cycle Time:

Scraper Loading Time: 1.00 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 6400 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	6087.00	1.60	3.00	4.60	1867	3.38

Haul Time: **3.38** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	6087.00	-1.60	3.00	1.40	2963	2.18

Return Time: **2.18** minutes

Total Scraper team cycle time: **7.16** minutes
Adjusted for job conditions: 403.41 LCY/Hour
Selected Number of Scrapers: 8 Scraper(s)
Adjusted single scraper team (unit) hourly production: 1,613.63 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **1,613.63** LCY/Hour

Unadjusted unit production/hour: 486.03 LCY/Hour
Optimal Number of Scrapers per push dozer: ___

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **208.49** Hours

Unit cost: $2.384 /LCY Total job cost: **$801,989**

SCRAPER TEAM WORK

Task description: **Replace Topsoil on N Pit**

Site: **Trapper Mine** Permit Action: TR124 Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: **N14A** State: Colorado Abbreviation: None
Date: 2/10/2020 County: Moffat Filename: C010-N14a
User: RAR

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance –Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	50	50	50	50
Ownership cost/hour:	$174.06	NA	$140.61	$140.61	$82.71	$9.27
Operating cost/hour:	$190.35	NA	$67.67	$67.67	$35.04	$8.87
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	$0.00	$0.00	$0.00	$0.00
Ripper op. cost/hour:	NA	NA	$0.00	$0.00	$0.00	$0.00
Operator cost/hour:	$30.86	NA	$41.24	$41.24	$28.52	$21.09
Unit Subtotals:	$395.26	NA	$249.52	$249.52	$146.27	$39.23
Number of Units:	8	0	1	1	1	1
Group Subtotals:	Work:	$3,162.08	Support:	$499.04	Maint:	$185.50

Total work team cost/hour: **$3,846.62**

MATERIAL QUANTITIES

Initial volume: 32,702 CCY Swell factor: 1.000
Loose volume: **32,702** LCY

Source of estimated volume: TR124 Application
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Scraper Bowl (volume) Basis:

Material weight: 2,550 lbs/LCY
Material description: Gravel - Dry
Rated Payload: 81,600 pounds
Payload Capacity: 32.00 LCY

Struck Volume: 24.00 LCY
Heaped Volume: 34.00 LCY
Average Volume: 29.00 LCY
Adjusted Capacity: **29.00** LCY

Cycle Time:

Scraper Loading Time:	1.00 Minutes
Maneuver and Spread Time:	0.60 Minutes

Job Condition Correction: Site Altitude: 6400 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5928.00	1.60	3.00	4.60	1867	3.30

Haul Time: **3.30** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5928.00	-1.60	3.00	1.40	2963	2.12

Return Time: **2.12** minutes

Total Scraper team cycle time:	**7.02**	minutes
Adjusted for job conditions:	411.45	LCY/Hour
Selected Number of Scrapers:	8	Scraper(s)
Adjusted single scraper team (unit) hourly production:	1,645.81	LCY/Hour
Adjusted multiple scraper team (fleet) hourly production:	**1,645.81**	LCY/Hour

Unadjusted unit production/hour:	495.73	LCY/Hour
Optimal Number of Scrapers per push dozer:		

JOB TIME AND COST

Fleet size:	1	Team(s)	Total job time:	**19.87**	Hours
Unit cost:	$2.337	/LCY	Total job cost:	**$76,432**	

SCRAPER TEAM WORK

Task description: **Replace Topsoil on N Pit**

Site: **Trapper Mine** Permit Action: TR124 Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #:	**N14B**	State:	Colorado	Abbreviation:	None
Date:	2/10/2020	County:	Moffat	Filename:	C010-N14b
User:	RAR				

Agency or organization name: DRMS

HOURLY EQUIPMENT

COST Shift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance –Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	50	50	50	50
Ownership cost/hour:	$174.06	NA	$140.61	$140.61	$82.71	$9.27
Operating cost/hour:	$190.35	NA	$67.67	$67.67	$35.04	$8.87
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	$0.00	$0.00	$0.00	$0.00
Ripper op. cost/hour:	NA	NA	$0.00	$0.00	$0.00	$0.00
Operator cost/hour:	$30.86	NA	$41.24	$41.24	$28.52	$21.09
Unit Subtotals:	$395.26	NA	$249.52	$249.52	$146.27	$39.23
Number of Units:	8	0	1	1	1	1
Group Subtotals:	Work:	$3,162.08	Support:	$499.04	Maint:	$185.50

Total work team cost/hour: **$3,846.62**

MATERIAL QUANTITIES

Initial volume: 86,748 CCY Swell factor: 1.000

Loose volume: **86,748** LCY

Source of estimated volume: TR124 Application

Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Scraper Bowl (volume) Basis:

Material weight:	2,550 lbs/LCY	Struck Volume:	24.00	LCY
Material description:	Earth - Dry packed	Heaped Volume:	34.00	LCY
Rated Payload:	81,600 pounds	Average Volume:	29.00	LCY
Payload Capacity:	32.00 LCY	Adjusted Capacity:	**29.00**	LCY

Cycle Time:

Scraper Loading Time: 1.00 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 6400 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:
Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2031.00	1.60	3.00	4.60	1867	1.21

Haul Time: **1.21** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2031.00	-1.60	3.00	1.40	2963	0.81

Return Time: **0.81** minutes

Total Scraper team cycle time: **3.62** minutes
Adjusted for job conditions: 797.90 LCY/Hour
Selected Number of Scrapers: 8 Scraper(s)
Adjusted single scraper team (unit) hourly production: 3,191.60 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **3,191.60** LCY/Hour

Unadjusted unit production/hour: 961.33 LCY/Hour
Optimal Number of Scrapers per push dozer: ___________

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **27.18** Hours

Unit cost: $1.205 /LCY Total job cost: **$104,551**

SCRAPER TEAM WORK

Task description: **Replace Topsoil on N Pit**

Site: **Trapper Mine** Permit Action: TR124 Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: **N14C** State: Colorado Abbreviation: None
Date: 2/10/2020 County: Moffat Filename: C010-N14c
User: RAR

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D10T - 10SU
-Dump Area:	Cat D10T - 10SU
Road Maintenance –Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 2,500 Gal.

Cost Breakdown:	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	100	100	100	50
Ownership cost/hour:	$174.06	NA	$140.61	$140.61	$82.71	$9.27
Operating cost/hour:	$190.35	NA	$135.35	$135.35	$70.09	$8.87
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	$0.00	$0.00	$0.00	$0.00
Ripper op. cost/hour:	NA	NA	$0.00	$0.00	$0.00	$0.00
Operator cost/hour:	$30.86	NA	$41.24	$41.24	$28.52	$21.09
Unit Subtotals:	$395.26	NA	$317.20	$317.20	$181.31	$39.23
Number of Units:	8	0	1	1	1	1
Group Subtotals:	Work:	$3,162.08	Support:	$634.40	Maint:	$220.54

Total work team cost/hour: **$4,017.02**

MATERIAL QUANTITIES

Initial volume: 129,373 CCY Swell factor: 1.000
Loose volume: **129,373** LCY

Source of estimated volume: TR124 Application Appendix A
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Scraper Bowl (volume) Basis:

Material weight: 2,550 lbs/LCY
Material description: Earth - Dry packed
Rated Payload: 81,600 pounds
Payload Capacity: 32.00 LCY

Struck Volume: 24.00 LCY
Heaped Volume: 34.00 LCY
Average Volume: 29.00 LCY
Adjusted Capacity: **29.00** LCY

Cycle Time:

Scraper Loading Time: 1.00 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 6400 feet

	Scraper	Push Dozer	Source
Altitude Adj:	1.000	NA	(CAT HB)
Job Efficiency:	0.830	NA	(CAT HB)
Net Correction:	0.830	NA	

Travel Time:
Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2031.00	1.60	3.00	4.60	1867	1.21

Haul Time: **1.21** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2031.00	-1.60	3.00	1.40	2963	0.81

Return Time: **0.81** minutes

Total Scraper team cycle time: **3.62** minutes
Adjusted for job conditions: 797.90 LCY/Hour
Selected Number of Scrapers: 8 Scraper(s)
Adjusted single scraper team (unit) hourly production: 3,191.60 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **3,191.60** LCY/Hour

Unadjusted unit production/hour: 961.33 LCY/Hour
Optimal Number of Scrapers per push dozer: ___________

JOB TIME AND COST

Fleet size: 1 Team(s)

Total job time: **40.54** Hours

Unit cost: $1.259 /LCY

Total job cost: **$162,832**

REVEGETATION WORK

Task description: **Seed N Pit: >6700 ft.-Rangeland with Shrubs**

Site: **Trapper Mine** Permit Action: TR124 Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: **N16** State: Colorado Abbreviation: None
Date: 1/15/2020 County: Moffat Filename: C010-N16
User: RAR

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			$	$
			Total Fertilizer Materials Cost/Acre	**$0.00**

Application

Description	Cost /Acre
	$
Total Fertilizer Application Cost/Acre	**$0.00**

TILLING

Description	Cost /Acre
Chisel plowing {DMG}	$94.63
Total Tilling Cost/Acre	**$94.63**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	$3.63
Bitterbrush, Antelope	4.40	1.35	$85.80
Mountain Brome - Bromar	0.72	1.16	$2.74
Great Basin Wildrye - Magnar	0.92	3.74	$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	$0.26
Chokecherry	3.00	0.21	$87.00
Burnett, Small (or Little) - Delar	0.40	0.51	$1.00

Sheep Fescue - Covar	0.15	2.34	$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	$2.46
Slender Wheatgrass - San Luis	0.28	1.02	$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	$1.93
Western Wheatgrass - Arriba	0.38	0.96	$2.47
Rabbitbrush, Rubber	0.26	3.87	$16.72
Needlegrass, Green - Lodorm	0.24	1.00	$2.83
Rose, Wood's	0.96	0.00	$19.68
Sagebrush, Mountain or Big	0.07	3.70	$1.38
Flax, Lewis Blue	0.30	1.99	$4.95
Red Top	0.02	2.29	$0.16
Sagebrush, Silver	0.10	1.94	$3.10
Saltbush, Four Wing	0.62	0.85	$7.75
Serviceberry	0.29	0.53	$17.84
Snowberry, Mountain	0.58	1.00	$29.29
Penstemon, Rocky Mountain	0.14	2.19	$4.13
Yarrow, Western	0.07	4.26	$2.93
Globemallow, Munro	0.08	0.91	$7.00
Aster, Pacific	0.02	0.35	$2.39
Goldeneye - Showy	0.08	0.92	$4.80
Totals Seed Mix	15.79	44.87	**$354.70**

Application

Description	**Cost /Acre**
Drill Seeding (DRMS Survey Cost)	$232.00
Total Seed Application Cost/Acre	**$232.00**

MULCHING and MISCELLANEOUS

Materials

Description	**Units / Acre**	**Unit**	**Cost / Unit**	**Cost /Acre**
			$	$
Total Mulch Materials Cost/Acre				**$0.00**

Application

Description	**Cost /Acre**
	$
Total Mulch Application Cost/Acre	**$0.00**

NURSERY STOCK PLANTING

Common Name	**No / Acre**	**Type and Size**	**Planting Cost**	**Fertilizer Pellet Cost**	**Cost /Acre**
					$

Totals Nursery Stock Cost / Acre	**$0.00**

JOB TIME AND COST

No. of Acres:	302.6	Cost /Acre:	$681.33
Estimated Failure Rate:	17.5%	Cost /Acre*:	$681.33
*Selected Replanting Work Items:	TILLING,SEEDING		

Initial Job Cost:	**$206,170.46**
Reseeding Job Cost:	**$36,079.83**
Total Job Cost:	**$242,250**
Job Hours:	**302.60**

REVEGETATION WORK

Task description: **Seed N Pit 60.1 acres without shrubs TR124**

Site: **Trapper Mine** Permit Action: TR124 Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: N16B State: Colorado Abbreviation: None
Date: 3/30/2020 County: Moffat Filename: C010-N16B
User: RAR

Agency or organization name: DRMS

FERTILIZING

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			$	$
			Total Fertilizer Materials Cost/Acre	**$0.00**

Application

Description	Cost /Acre
	$
Total Fertilizer Application Cost/Acre	**$0.00**

TILLING

Description	Cost /Acre
Chisel plowing {DMG}	$94.63
Total Tilling Cost/Acre	**$94.63**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Arrowleaf Balsamroot	0.40	0.50	$28.08
Beardless Wheatgrass - Whitmar	0.31	1.01	$3.63
Mountain Brome - Bromar	0.72	1.16	$2.74
Great Basin Wildrye - Magnar	0.92	3.74	$10.63
Kentucky Bluegrass - Ginger	0.06	2.96	$0.19
Alfalfa - Ladak (inoculated)	0.10	0.48	$0.26
Burnett, Small (or Little) - Delar	0.40	0.51	$1.00
Sheep Fescue - Covar	0.15	2.34	$0.92
Milk Vetch, Cicer - Lutana	0.30	1.00	$2.46

Slender Wheatgrass - San Luis	0.28	1.02	$1.19
Streambank Wheatgrass - Sodar	0.26	0.85	$1.48
Thickspike Wheatgrass - Critana	0.28	0.99	$1.93
Western Wheatgrass - Arriba	0.38	0.96	$2.47
Needlegrass, Green - Lodorm	0.24	1.00	$2.83
Flax, Lewis Blue	0.30	1.99	$4.95
Red Top	0.02	2.29	$0.16
Penstemon, Rocky Mountain	0.14	2.19	$4.13
Yarrow, Western	0.07	4.26	$2.93
Globemallow, Munro	0.08	0.91	$7.00
Aster, Pacific	0.02	0.35	$2.39
Goldeneye - Showy	0.08	0.92	$4.80
Totals Seed Mix	5.51	31.41	**$86.15**

Application

Description	**Cost /Acre**
Drill Seeding (DRMS Survey Cost)	$232.00
Total Seed Application Cost/Acre	**$232.00**

MULCHING and MISCELLANEOUS

Materials

Description	**Units / Acre**	**Unit**	**Cost / Unit**	**Cost /Acre**
			$	$
Total Mulch Materials Cost/Acre				**$0.00**

Application

Description	**Cost /Acre**
	$
Total Mulch Application Cost/Acre	**$0.00**

NURSERY STOCK PLANTING

Common Name	**No / Acre**	**Type and Size**	**Planting Cost**	**Fertilizer Pellet Cost**	**Cost /Acre**
					$
Totals Nursery Stock Cost / Acre					**$0.00**

JOB TIME AND COST

No. of Acres:	60.1	Cost /Acre:	$412.78
Estimated Failure Rate:	17.5%	Cost /Acre*:	$412.78
*Selected Replanting Work Items:	TILLING,SEEDING		

Initial Job Cost:	**$24,808.08**
Reseeding Job Cost:	**$4,341.41**
Total Job Cost:	**$29,149**
Job Hours:	**60.10**